

## NOTES.

MADAME CURIE and M. Debierne have presented a joint memoir to the Paris Academy of Sciences announcing that they have succeeded in isolating pure radium. The metallic radium obtained is reported to be of a brilliant white colour, which blackens when exposed to the air. It burns paper, rapidly decomposes water, and adheres to iron.

THE chief chemist of the Barrow works of Messrs. Vickers, Sons and Maxim announces the discovery of an alloy which is believed to be superior to anything of its kind hitherto manufactured, and is to be known as duralumin. While being slightly heavier than pure aluminium, it is reported to be as strong as steel, and it can be rolled, drawn, stamped, extended, or forged at suitable temperatures. It is less corrodable than other high aluminium alloys under all the usual corrosive tests, and possesses many valuable properties. It is only one-third the weight of brass.

ACCORDING to *Science*, Dr. Charles Fahlberg, who was associated with Prof. Ira Remsen in the discovery of saccharine, died at Bad Nassau on August 15.

THE *Times* announces the death, at Cintra, of Prof. Pedroso, president of the Geographical Society of Lisbon.

THE centenary of the death of the famous Italian naturalist Filippo Cavolini will be commemorated by a series of meetings to be held in Naples on September 12-14. The arrangements are in the hands of a committee, the presidents of which are Profs. Monticelli and Cavara, professors of zoology and botany in the Royal University of Naples, and the inaugural meeting will be held in the Great Hall of that University on September 12 at 10 a.m.

THE following are the arrangements for the opening of the winter session of the London medical schools:—St. George's Hospital, King's College Hospital, and London Hospital will open on October 1. At the first-named Dr. S. Squire Sprigge will deliver an oration "On Prizes." St. Bartholomew's Hospital, Charing Cross Hospital (at which Dr. F. W. Mott, F.R.S., will deliver the eighth Huxley lecture, on "The Hereditary Aspect of Nervous and Mental Diseases"), Guy's Hospital, London (Royal Free Hospital) School of Medicine for Women (at which an address on "Women's Sphere in Medicine" will be given by Dr. E. W. Roughton), Middlesex Hospital, St. Mary's Hospital, University College Hospital, and Westminster Hospital will reopen on October 3. The opening day for St. Thomas's Hospital is October 4, and that of the London School of Tropical Medicine is October 14, when Dr. H. A. Miers, F.R.S., will give an address. At the opening of the medical school of the Victoria University of Manchester, on October 3, Prof. W. Thorburn will speak on "The Evolution of Surgery."

THE second International Congress for the Preservation of Game was opened at Vienna on Monday last. At one of the sections a message from King George to Mr. F. C. Selous, urging the desirability of making international provision for the preservation of migratory game birds, especially woodcock and quail, was read. A resolution in the sense of the King's message was adopted by the section. The next congress, which will meet in three years' time, is to be devoted chiefly to the preservation of game outside Europe.

SPEAKING as president of the twenty-fifth Congress of the Royal Sanitary Institute (now in session at Brighton),

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Sir John Cockburn said the history of the growth of sanitary science is epitomised in that of the Royal Sanitary Institute, which during the last quarter of a century has exercised a continually increasing influence for good on the health of the nation. Cleanliness, fresh air, pure food, and prevention of infection are the key-notes of modern medicine. In every city ample provision for baths should be made available for the masses. But cleanliness should not be confined to external appearance. Clean air is required. It is true that recent years have witnessed some improvements in this respect. The ventilation of our theatres also is not so bad as it was. It is perhaps in railway travelling that those who love to keep their bodies pure suffer most. There are smoking carriages for those who affect the weed; why not fresh-air carriages also, in which any occupant could demand that one at least of the windows shall be kept open? The objectors generally express the fear of catching cold. It is high time that this fallacy were exploded. What is called a cold in the head is an infectious disease, and is caught nowhere so readily as in close compartments. Fresh air, far from being the cause, is the best preventive.

THE treaty by which the Sovereign rights of the Korean Emperor are transferred to the Emperor of Japan came into effect on Monday, August 29, when it was promulgated in Seoul and Tokyo. The Korean peninsula, about equal in size to Great Britain, has thus become an integral part of Japanese territory. The Japanese Embassy has issued the following announcement, received from the Foreign Office at Tokyo, referring to the annexation:—(1) Korea shall hereafter be named "Chosen"; (2) the Government-General shall be established in Chosen; (3) the Residency-General and its accessory offices will be in existence for the present, and the Resident-General will exercise the functions of the Governor-General; (4) the issue of special passports for the people of Chosen is abolished, and hereafter the Chosens will be treated on an equal footing as the Japanese in the matter.

IT being possible to allot space in the Chemical Court of the reconstituted British Section of the Brussels Exhibition only to little more than half of the original exhibitors, a letter has been addressed by Sir Boverton Redwood, chairman of the Chemical Industries Committee, to the remaining firms asking them to furnish a descriptive account of their exhibits, with photographs if possible, for display on a wall space which has been appropriated for the purpose. It is suggested that a convenient size for the framed account would be 4 feet by 3 feet, but in exceptional circumstances it is hoped that room may be found for a larger frame. Frames will be supplied free of cost by the Exhibition Branch of the Board of Trade, to whom photographs should be sent at the earliest possible date, as the new British Section of the exhibition is to be formally opened on September 15.

THE twenty-first annual general meeting of the Institution of Mining Engineers is to be held at Nottingham on Wednesday, September 14, when the following papers will be presented:—The mining school at Bochum, Prof. H. Louis; progress in the use of exhaust-steam power, Mr. J. Burns; the Elliott-Jones vertical coke-oven, Mr. T. C. Futers. In addition, the undermentioned communications, which have already appeared in the *Transactions* of the institution, will be open for discussion:—A storage-battery extension to a three-phase colliery power-plant, Mr. W. Maurice; measurements of the increase of temperature in

bore-holes, with the depth, the technics, and practical importance of the same for geological prognosis, with reference to new measurements in Mexico, Borneo, and in Central Europe, Drs. J. Koenigsberger and M. Mühlberg; experiments illustrative of the inflammability of mixtures of coal-dust and air, Prof. P. Phillips Bedson; some memoranda concerning coal-dust and the essential principles of the coal-dust theory, Mr. H. W. G. Halbaum; the use of concrete for mine support, Prof. W. R. Crane; fire-damp caps and the detection of fire-damp in mines by means of safety-lamps, Messrs. E. B. Whalley and W. M. Tweedie; equipment for the study of flame-caps and for miscellaneous experiments on safety-lamps, Prof. G. R. Thompson.

THE second International Conference for the Study of Cancer is to be held in Paris on October 1-5 under the presidency of Prof. Czerny. French, English, and German are to be the official languages of the conference. Intending members should give notice to the treasurer, Dr. A. de Rothschild, 6 rue Saint-Philippe de Roule, Paris VIII<sup>e</sup>.

THE ninth International Conference on Tuberculosis will take place at Brussels on October 5-8. Among the subjects likely to be brought under consideration are:—Hereditary tuberculosis contagion; the pre-disposition to the disease; the protection of children against tuberculosis; tuberculosis and the school; the part of women in the campaign against tuberculosis. Reports on the progress of the war against tuberculosis in different countries, milk supply, solar radiation, international statistics, and international marks indicating the condition of the lungs will be presented, and a paper will be read by Dr. Nathan Raw on the general measures recommended by the International Conference to the public authorities for the prevention of the spread of tuberculosis in different countries. The address of the Secretariat of the conference is Avenue Van Volxem, 253, Forest-Brussels.

IN connection with the Turin International Exhibition to be held in 1911, there is to be a competition in the transmission and reception of messages with Morse, Hughes, and Baudot apparatus. According to the *Electrician*, the tests will begin on August 22, and will be open to members of either sex of the staffs of telegraph administrations and army or navy telegraphists. The tests will include twenty minutes transmission and thirty minutes' reception of messages by the Morse apparatus, the receiving being done with either the sounder or the writing instrument; and one hour of transmission by Hughes apparatus, mechanical or electrical, and with either E or W key; and one hour of transmission by Baudot quadruple apparatus. The text will be in languages suitable to the operators, will be printed on sheets containing fifty words each, and will consist of words, groups of letters, and figures. The text will be different for each system, but the same for competitors in the same system. A special test for reception by sounder and the writing of the text by a writing machine (the writing machine being provided by the competitor) will also be held, if not less than ten competitors belonging to three different administrations apply by June 15, 1911. The transmission will be effected in accordance with the International Telegraph Regulations. There will be a championship cup, which will remain the property of the successful competitor, and be competed for by competitors who gain a prize in each of the three systems (Morse, Hughes, and Baudot). There will also

be an international representation prize cup to be competed for by groups of three competitors who all represent one State, and have between them won prizes in all the three sections. There will also be individual prizes—ten for the Morse, eight for the Hughes, and eight for the Baudot tests. Applications must be sent by June 15 next to the Secretariat General, Bureau du Concours International de Telegraphie, Rome.

IN *Man* for August Mr. C. M. Woodford describes a remarkable stone-headed axe from Rennell Island which he has been fortunate enough to acquire. He shows that this weapon is in type quite different from the examples with which it has been compared found in Malaita, in which a nodule of iron pyrites is attached to a handle ornamented with nautilus or pearl shell. In the Rennell Island example, the head, formed apparently of a basaltic stone, is star-shaped with eight projections, and is attached to a plain handle made of a hard, dark wood, probably *Afzelia bijuga*. The union is effected by an ingenious system of rattan lashings, which pass through holes in the handle.

MR. T. SHEPPARD, the energetic curator of the Hull Museum, in his annual report for 1909 records important accessions to the valuable collections in his charge. On the antiquarian side, the most important addition is the famous Brigg boat, constructed from a single trunk of oak, 50 feet long and 6 feet broad. From the caulking Mr. Slater has been able to identify a good list of mosses and hepaticas, these being the earliest records of the kind for the county. This boat has formed the subject of no fewer than forty monographs prepared by members of various learned societies, and Mr. Sheppard has in hand a descriptive handbook of this important object. A grey ware jar from North Lincolnshire has also been received, containing coins of the Emperors Valens, Julian II., Gratianus, Valentinianus, and Constantius II., all of the fourth century A.D., with a curious ring bearing an image of the dove and olive branch, probably of Christian origin, and dating from the fifth century. The museum has also been fortunate in acquiring two important collections of birds, one that of Mr. Fortune, of Yorkshire birds, occupying forty cases; the second that of Sir H. Boynton, from Burton Agnes Hall, in 200 large cases. Both these important collections are now being catalogued and arranged for exhibition.

MR. W. C. FARABEE reprints from the *Proceedings of the American Antiquarian Society* for October, 1909, an account of the strange race known as the Machyengas, who inhabit the region lying between the base of the Cordillera and the Upper Ucayali and Urubamba rivers in eastern Peru. The most remarkable fact about them is that they have no fear of the dead, and do not hesitate to touch the corpse and dispose of it without any ceremony, simply flinging it into the river to be eaten by fish. This results from the absence of any belief in the return of the soul, which after death enters the red deer. This animal, though not regarded as sacred, is not used for food. When asked what becomes of the spirit, they reply, "Nothing; that is the end of it when it enters the deer." Their deity Idioici, "the big man of the sky," is otiose, and has little concern with the world except that he thunders and sends rain. He is treated with indifference, receiving no prayers, offerings, or dances; they have no charms or fetishes, and are controlled by no power or influence outside themselves. This is a remarkable picture of a tribe bound by no conventions or restraints of religion or custom.

THE Bulletin of the Sleeping Sickness Bureau (No. 19, July 26) contains a progress report on the Uganda sleeping-sickness camps from December, 1906, to November, 1909, by Dr. A. P. Hodges, principal medical officer. It deals particularly with the treatment of the disease. The conclusions are that the prospect of curing sleeping sickness by medicinal treatment has not materially increased, that the percentage of apparent cures is practically negligible from the point of view of stamping out the disease, that the percentage of apparent cures continues to diminish with lapse of time after treatment, while the death-rate continues to increase, and that there is no decided superiority of one mode of treatment over another of those known to be of benefit.

THE July number of the monthly *Folia Neuro-biologica* thoroughly maintains the reputation of that magazine for usefulness as a bibliographical review of neurology. Of the three original articles contained in this number, perhaps the most interesting is a paper by Dr. Ferruccio Rossi on the cutaneous innervation of the lumbo-sacral region in the dog. The author concludes (1) that spinal transection at various levels in this region reveals very precise limits between cutaneous sensibility and insensibility; (2) that these limits are constant and characteristic for each segmental level; (3) that transection between the 13th dorsal and 1st lumbar, between the 1st and 2nd, 2nd and 3rd, or 3rd and 4th lumbar segments involves only a single *dermatom*, while yet more distal transections involve more than a single *dermatom*; (4) that the results obtained are of value for the study of the dorsal and ventral axile lines of the extremities, and for the topical diagnosis of spinal lesions.

To the Bulletin of the Royal Academy of Belgium, Classe des Sciences, 1910, No. 5, Mr. A. Rutot contributes an article on the existence in Belgian caverns of layers containing remains of Arctic rodents. Such layers have been already identified in Swiss and German caves in association with those containing the so-called mammoth-fauna, which indicates a moderately cold climate, and includes the Aurignacien and Solutréen stages. One of these rodent zones—the Middle Magdalenien—contains a fauna comparable to that of the European and Asiatic steppes, while a second includes one of the type of the Siberian tundra. Both these layers belong to the reindeer epoch; but the tundra-like fauna alone indicates absolutely Arctic conditions, *Myodes torquatus*, *Arvicola gregalis*, and *Lagomys pusillus* representing the Arctic type of rodents. The researches of the author reveal the interesting fact that almost precisely identical faunistic, and therefore climatic, conditions obtain in the caverns of the Meuse valley and other districts in Belgium, where, however, the Solutréen stage is practically unrepresented.

ACCORDING to the *Field* of August 3, no fewer than nine "schools" of caa'ing whales, *Globicephalus melas*, were observed out at sea by some men occupied in capturing sea-fowl on the bird-rocks at Vagö, in the Færöes. Of these, 250 were surrounded by the boats and driven into Midvag, and killed the same evening. The next morning, when the take was being distributed, news came that another very large school had made its appearance at Sand, some twelve miles distant, but that no attempt at driving them towards the land had been made, the number of boats present being inadequate for the purpose. Many of the Midvag people at once started for the spot, and as a result of the combined attack which ensued 400 more whales were secured. The value of the products of a whale of this species is about 3*l.* 7*s.* 6*d.*

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THE *Emu* for July contains an excellent coloured plate of the white-fronted fantail (*Rhipidura phasiana*), a species first described by Mr. de Vis in 1884, on the evidence of a specimen collected near the mouth of the Norman River. In addition to a portrait of the late Dr. Sharpe, this issue also includes various papers on Australian bird-life, chiefly of local interest.

IN part i. of vol. xl. of the *Memoirs of the Museum of Comparative Zoology* at Harvard College, Mr. Glover M. Allen gives coloured figures of living specimens of that rare insectivorous mammal *Solenodon paradoxus* of San Domingo, based on living specimens recently received by that institution. These show that the general colour is some shade of tawny or rufous, with a variable amount of black on the back and throat, and a pale nuchal spot. They further indicate that the well-known figure of the other species of the genus, *S. cubanus*, given by Peters is incorrect in showing the tail bent laterally, this appendage being incapable of such lateral movement except near the tip. The two species were formerly believed to be distinguished merely by colour, but it is now ascertained that there is a difference in the number of the vertebrae. Much information with regard to the skeleton, muscles, and viscera is given in Mr. Allen's memoir.

A STUDY of the distribution of the *Mollusca* in connection with an ecological survey of a marsh area on the Chicago River is discussed by Mr. F. C. Baker in a Bulletin (vol. viii., art. 4) of the Illinois State Laboratory of Natural History. The author is especially concerned with showing how ecological observations may throw light on the taxonomic relation of species.

MR. S. T. DUNN places on record in the *Kew Bulletin* (No. 6) a historical account of the Hong Kong herbarium, in which he duly acknowledges the valuable services of Mr. C. Ford, who was for thirty years curator, and of Sir Joseph Hooker, whose latest assistance has been rendered in the form of a personal revision of the balsams. The miscellaneous notes in the same number of the journal contain several interesting items, including a letter from Mr. H. N. Ridley describing the botanical features observed on a journey to the north-west of the Malayan peninsula, where he traced the change from a Malayan to a Siamese flora about Gunong Terai; a collation of data concerning the germination of the rubber-yielding species *Manihot dichotoma*, *M. piauhensis*, and *Funtumia elastica*; also a communication regarding the Guayule industry in Mexico.

AN article on the genus *Citrus*, contributed by Mr. A. W. Lushington to the *Indian Forester* (June), claims attention both as a systematic revision of a difficult genus of cultivated plants, and because the author attempts to identify the plants yielding the numerous Indian varieties of citrus fruit. Four classes or subgenera are defined. Firstly, there is *Citrus trifoliata*, regarded as the most primitive. Then there are the species bearing four-petaled flowers, and presenting other typical characters, represented by the caffre, sour and sweet limes. A third class is characterised by five-petaled flowers, usually white, and a fruit with a loose skin, of which the mandarin is an example; while the fourth class includes the pomelo, lemons, Seville orange, and citron, which agree in the production of a fruit with a firmly adherent skin and flowers normally five-petaled.

A CORRESPONDENT informs us that he recently found growing on the cliffs near Osmington, Weymouth, among a large quantity of ordinary blue chicory, several plants

which bore white flowers corresponding in every respect with the ordinary chicory except in colour. Though this is an uncommon occurrence, the white variety of the common chicory has been recorded before. Syme in "English Botany" (v., p. 123) gives the colour as "pale bright-blue varying to white," and Hooker, "Students' Flora" (p. 210), says flowers "bright blue, rarely white."

THE summary of the weather issued by the Meteorological Office for the summer season comprised by the thirteen weeks from June 25 to September 3 shows that the mean temperature was rather below the average except in the north and west of Scotland, but the difference from the normal was nowhere large. The absolute maximum temperatures ranged from  $80^{\circ}$  to  $83^{\circ}$  in all the districts of the United Kingdom with the exception of the north and south of Ireland and the Channel Islands, where the highest temperature was in each case  $79^{\circ}$ . The lowest shade temperatures ranged from  $30^{\circ}$  in the east of Scotland and  $34^{\circ}$  in the north of Scotland and the south-west of England to  $40^{\circ}$  in the Midland counties,  $41^{\circ}$  in the south of Ireland, and  $47^{\circ}$  in the Channel Islands. The largest aggregate rainfall was 13.71 inches, in the west of Scotland, and the lowest 6.81 inches, in the east of England. There was an excess of rain over the entire kingdom except in the north of Scotland, the greatest excess being 2.77 inches, in the south-west of England. The number of rainy days ranged from eleven more than the average in the south of Ireland to five less than the average in the north of Scotland. The largest number of rainy days in any district was sixty, in the south of Ireland, and the least forty-four, in the south-east of England. There was a deficiency of bright sunshine for the thirteen weeks in all districts except in the north of Scotland and the north of Ireland. The greatest deficiency was 135 hours in the Channel Islands, 126 hours in the south-east of England, and 113 hours in the north-east of England. At Greenwich the mean temperature for the three summer months this year was  $1^{\circ}$  below the average, the mean being  $61^{\circ}$ . The absolute maximum temperature was  $82.3^{\circ}$ , which is decidedly low in comparison with former summers, and there were forty-three days with a temperature of  $70^{\circ}$  or above, which is a rather larger number of warm days than some recent summers. The aggregate rainfall was 8.10 inches, which is 1.32 inches more than the average, but is less than in the summer of either 1908 or 1909. The deficiency of bright sunshine at Greenwich for the three months was 170 hours.

THE meteorological chart of the North Atlantic and Mediterranean for September (first weekly issue, August 18), published by the Meteorological Committee, gives an interesting account, with daily synoptic charts, of the weather over the Atlantic for a week ending August 17, and throws considerable light on the cause of the changeable weather over the British Islands during that period. Between August 11 and 14 a barometric depression passed slowly from about  $55^{\circ}$  N.,  $30^{\circ}$  W., to the neighbourhood of our western coasts, causing showery weather generally over western Europe, and thunderstorms in many parts of the United Kingdom on the night of August 14. During the latter half of the period another depression developed over eastern Canada, and furnished a good example of such disturbances crossing the whole of the North Atlantic. It arrived off the west of Scotland by the morning of August 17; changeable weather therefore again set in, and south and south-west winds became strong on parts of our western and southern coasts.

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THE director-general of Indian observatories has issued a memorandum, dated August 6, on the monsoon conditions prevailing during June and July, with anticipations for August and September. The combined distribution of rainfall in June and July was rather irregular, being considerably in excess in some provinces and in defect in others. In July the monsoon conditions were weak over a large area, and an almost complete break in the rains occurred in the second and third weeks. From information obtained as to the conditions over a large part of the earth's surface since the date of the memorandum of June 9 (see NATURE, July 28), the director-general concludes, *inter alia*, that the general outlook appears more uncertain than usual, but there is no reason for expecting a large defect in the total amount of rainfall during August and September.

THE *Annuario* of the Rio de Janeiro Observatory, 1909-10, contains, in addition to ephemerides and astronomical data for the two years stated, a large number of tables relating to the physics of the globe. The tables usually employed in the reduction of astronomical and meteorological observations, and the values of the various units are very complete and handy for reference. The compilation extends to 405 octavo pages, but contains no original scientific discussions.

*Le Radium* for July devotes seven pages to tables of constants of ionisation and of radio-activity compiled by Prof. T. H. Laby. The following constants are tabulated:—Rates of re-combination of ions, their mobilities, the electric charges they carry, the quotients of the charges by the masses, path and velocity of  $\alpha$  rays, number of  $\alpha$  particles emitted by radium, heat developed by radioactive substances, and a number of other radio-active and atomic constants which may be calculated from these. In the same number M. W. Duane, of Madame Curie's laboratory, gives a description of an arrangement for registering photographically the number of  $\alpha$  particles emitted by a radio-active substance, founded, like the counting method of Prof. Rutherford and Dr. Geiger, on the augmentation of the ionisation of a rarefied gas within a closed vessel by the collision of the  $\alpha$  particles with the molecules. The vessel, of small capacity, is of ebonite, closed below by a brass plate having a small window in it covered with a thin sheet of mica. The radio-active substance is placed below the window, and the brass plate is raised to an electrical potential nearly sufficient to cause a discharge to take place between it and a wire electrode at the top of the vessel, which is connected to a gold-leaf electroscope. An image of the gold leaf is formed on a photographic film moving behind a slit. The gold leaf is brought back to the normal position after each displacement by means of a leak produced by polonium outside the electroscope. Several reproductions of photographs obtained are given, which show the displacements produced by the  $\alpha$  particles, but the author gives a further photograph showing displacements obtained without  $\alpha$  particles, the explanation of which he is not yet in a position to give.

THE current number of the *Zeitschrift für physikalische Chemie* contains another contribution from the van 't Hoff Laboratory at Utrecht on the allotropy of the elements, the alleged allotropy of lead having been examined by E. Cohen and K. Inouye. During the electrolysis of solutions of lead salts, it was shown by O. Lehmann that two kinds of crystals can be formed according to the conditions, one crystallising in the regular and the other in the monosymmetric system. It has now been found that cells set up with these different crystals show no difference

of electromotive force, from which it is concluded that these two crystalline forms are not really allotropic modifications.

THE July issue of the Journal of the Association of Teachers in Technical Institutions has reached us. Its leading contents include the address of the president of the association, Mr. J. Wilson, in Birmingham last June, and an address delivered by Dr. Robert Pohl to the west Yorkshire branch of the association last April. Both these discourses have already been dealt with in these columns.

THE Cambridge University Press gives notice that it has taken over the copyright and control of the "Encyclopædia Britannica," and that it will publish the new and complete edition (the eleventh) about the end of the present year. The work entirely supersedes all previous editions, and brings its survey down to the summer of 1910. The whole of the twenty-eight volumes will be issued at one time, in two forms, an ordinary paper impression and one on India paper. To many readers the thin paper edition will come as a great boon.

THE Geologists' Association announces that its jubilee volume, "Geology in the Field," is now completed, and that an index to it is in preparation, and will be issued shortly.

#### OUR ASTRONOMICAL COLUMN.

REDISCOVERY OF D'ARREST'S COMET (1910c).—A telegram from the Kiel Centralstelle announces the rediscovery of D'Arrest's comet, by M. Gonnessiat, on August 26. The comet is of the fourteenth magnitude, and its position at 0h. 32.6m. (Algiers M.T.) on the day of discovery was R.A.=16h. 48m. 25.3s., dec.=9° 42' 50" south; this position lies in Ophiuchus about 5° E. of ξ Ophiuchi.

This comet was discovered by D'Arrest in 1851, and has a period of about 6.5 years. In 1903 it escaped observation, but was observed, after passing perihelion on May 21, in the summer of 1897.

An ephemeris for the comet is published in No. 4437 of the *Astronomische Nachrichten* (p. 344). The observations indicate that corrections of -1m. 17s., +5.1', should be applied to M. Leveau's ephemeris (*Bulletin astronomique*, vol. xxvii., p. 81), and the following places result:—

##### Ephemeris oh. M.T. Paris.

1910	h.	a. m.	δ
September 9	...	17 28 8	-16 53' 4
" 11	...	17 35' 4	-17 53' 3
" 13	...	17 42' 3	-18 52' 0
" 15	...	17 49' 4	-19 49' 2

Owing to the low declination and the fact that the magnitude is only 14, observations in these latitudes are not very promising.

THE RECENT OCCULTATION OF η GEMINORUM BY VENUS.—Observations of the occultation of η Geminorum by Venus on July 26, made at several observatories, are reported in No. 4435 of the *Astronomische Nachrichten*. MM. Baldet, Quénisset, and Antoniadi found, at Juvisy, that the times of immersion and emersion were 15h. 2m. 9s.  $\pm$  2s. and 15h. 5m. 39s.  $\pm$  0.5s. (M.T. Paris) respectively, the duration of the occultation being 3m. 30s.  $\pm$  2.5s. A notable feature of the emersion under good conditions was the suddenness with which it took place; within  $1\frac{1}{2}$  or 2 seconds from the first suggestion of reappearance, the star regained its normal brightness. Apparently the rays were not deviated more than 0.3", and there was no change in the colour of the star. From the fact that the augmentation of the star's light extended over  $1\frac{1}{2}$  or 2 seconds, the observers deduce that the height of the planet's atmosphere, producing the absorption, is about 80 to 110 km.

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SEARCH-EPHEMERIDES FOR COMETS 1889 V. (BROOKS) AND 1890 VII. (SPITALER).—A set of elements and a search-ephemeris for Brooks's comet, 1889 V., are published in No. 4437 of the *Astronomische Nachrichten* by Dr. Bauschinger. The probable time of perihelion passage is 1911 January 8, and the ephemeris covers the period August 4, 1910, to February 20, 1911. This comet is of special interest owing to its having thrown off four fragments, one of which became brighter than the parent body, in 1889. Seen in 1903, it was single and of the fourteenth magnitude, so that its detection at the coming approach is doubtful. According to the ephemeris, the comet was at its nearest to the earth at the beginning of August, and its present position (September 9) is in Sagittarius at  $\alpha=19h. 37m.$ ,  $\delta=-29^{\circ} 55' 2''$  south.

The rediscovery of Spitaler's comet is still more doubtful. Discovered in 1890, its period was found to be about 6½ years, but it was not seen in 1897 or 1903. However, Herr F. Hopfner has calculated elements for the present approach, and publishes them, with nine four-day search ephemerides, in No. 4437 of the *Astronomische Nachrichten*. The different ephemerides are calculated for different dates of perihelion passage covering the period September 12 to November 15 in eight-day intervals.

THE SUN-SPOTS OF 1909.—A statistical summary of sun-spots, as observed at the Royal Observatory of Capodimonte during 1909, is published by Dr. E. Guerrini in No. 6, vol. iv., of the *Rivista di Astronomia* (Turin). In it are given numerous tables showing analyses, in different forms, of the frequencies, areas and numbers of spots, faculae, &c., which should prove useful to anyone discussing solar phenomena. The mean diurnal frequency of spot groups for the year was 3.6, 1.7 less than that for 1908; the mean diurnal number of spots was the same, 30.5 in each year.

WATER VAPOUR ON MARS.—The conditions obtaining on Mount Whitney during the Lick Observatory expedition researches in September, 1909, are discussed by Prof. Campbell in No. 3, vol. iv., of the *Journal of the Royal Astronomical Society of Canada* (p. 212). Prof. Campbell combats the idea that they were unfavourable, and says that on September 1 and 2, when the photographs were taken, the nights were as perfect for the purpose as could be wished. He also points out that with a nearly evanescent  $\alpha$  band, the more water vapour one attributes to the terrestrial atmosphere, the less remains attributable to that of Mars.

MEASURES OF DOUBLE STARS.—Dr. Lau's tenth list of double-star measures appears in No. 4436 of the *Astronomische Nachrichten*. It contains the places, recent measures, and the colours of 122  $\alpha$  and 6  $\Omega$  stars, and in some cases the formula giving the nature of the variation in distance and position-angle. It is not without significance, perhaps, in the discussion of the colours of double stars, that, in the majority of cases, where both stars have the same colour the colour is given as "white"; where they differ, the colours are most often complementary.

THE PERMANENT INTERNATIONAL COMMITTEE FOR THE "CARTE DU CIEL."—We have now received the volume giving an account of the meeting of the permanent committee for the execution of the *Carte photographique du Ciel*, which took place in Paris in April, 1909. The volume gives a list of those who attended, and a detailed account of the discussions and resolutions; but as the meeting was reported at length in our issue of June 10, 1909, there is no need to refer further to its proceedings.

METEORS AND BOLIDES.—No. 1, vol. iv., of *Palaestra*, a monthly journal issued at Asti, Italy, contains an interesting paper by Prof. Guido Cora on meteors and bolides. The paper was suggested by the appearance of a remarkably fine bolide at Casalbordino (Abruzzi) on December 3, 1909, and contains a discussion of the appearance, the frequency, and the general phenomena attending the appearance of meteors.

HISTORY OF NAVIGATION.—An interesting article on the determination of position at sea, written by Prof. Marguet,